



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM
4876 Hay Point Landing Road
Smyrna, Delaware 19977
302-735-8651
Fax: 302-653-3431

Thank you for considering participating in the **Summer Bat Count 2010**. We are asking interested volunteers to find a bat colony and count the bats as they leave their roosts to feed in the evenings. The colony could be in a barn, attic, tree or bat box ... anywhere you find a group of bats hanging out together! If you want to be a volunteer but don't know of any roosts sites, just let us know and we'll try to help you find one near where you live.

Bats are extremely beneficial to our environment and keeping track of them is a fun and rewarding activity for a family, group of friends or individual. It's an interesting and unique way to connect with nature and do something helpful for wildlife.

Why monitor the bats in Delaware?

In Delaware, bats are a major predator of night-flying insects, and therefore provide us with a valuable and free service. In addition to mosquitoes, bats eat many of the pests that affect our crops including cucumber beetles, ground beetles, and leaf hoppers. It is to our benefit to have them around.

And bats are in trouble ... BIG trouble! A new disease has emerged that is killing huge numbers of bats. White Nose Syndrome (WNS) has caused major mortality at winter hibernation sites in 14 US states and also Canada. WNS is characterized by a white, cold-loving fungus, it causes a sub-dermal infection, unusual behaviors and, eventually, death to the bats. *In April 2010, the fungus associated White Nose Syndrome was confirmed on bats in Delaware.* Delaware doesn't have caves or mines for hibernating bats so we do not see the direct die-offs other states have witnessed. However, we expect to see changes to our bat populations because many of our bats migrate from hibernation sites in WNS-affected states. We don't yet completely understand how the disease affects summer bat colonies. The Delaware Division of Fish and Wildlife is working closely with other state biologists to monitor the effects of this horrible disease and you can help, too.

Who can volunteer?

- Anyone!

What can you do to help?

- Find a bat roost in your area (we can help you if you don't know of any)
- Count the bats as they emerge from their roost in the evening.
- Fill out the forms provided by DE Fish and Wildlife (on the website)
- Send the forms to us.

Are the forms hard to fill out?

- No - we try to keep the amount of paperwork reasonable, and once basic site information is in the database, survey paperwork becomes minimal.

When can I start?

Tonight! We ask that each volunteer conduct at least one count between late May and the end of August, but more frequent surveys would be ideal. If only doing one survey, the best time to survey is mid-July when young are flying and the colony has not begun to disperse. In other states, this survey has documented bats using buildings, bridges and bat boxes (artificial bat roosts). Counts can range from 1 bat to several hundred at one site.

Come and join the bat counters!

It can be an exciting, educational and fun wildlife viewing activity. Many people turn this survey into a social event with a dinner or dessert stop afterward.

You can start by going to:

<http://www.fw.delaware.gov/bats/>

Take a walk around your neighborhood at dusk and watch for flying bats. Then try to track them back to the roost they've exited. This is an exciting opportunity to get involved and become a citizen scientist in important research. Many states are conducting surveys so the data can be pooled over large areas. You can contribute by just counting bats on warm summer evenings. You may have them just outside your back door and, once you start, you'll want to learn more. You can get more bat information by visiting your library, our website or Bat Conservation International's website at www.batcon.org.

We look forward to hearing from you.

2010 Delaware Bat Count Project

Volunteer Project Instructions

INTRODUCTION

Your survey results will be used to

- Identify and evaluate the approximate size of bat maternity roosts by counting bats as they emerge from roost site.
- Evaluate differences between bat pup pre-flight and post-flight counts using more extensive count surveys at some locations.

The Goals of the survey are to

- Gather base line information on summer colonies
- Evaluate the impact of WNS on summer colonies
- Assist in the identification of the primary WNS contagion
- Determine if WNS contagions persist and can be transmitted in summer roosts; and correlate long term trends with the spread of WNS.

COMMITMENT

It is hoped that surveyors will commit to conducting surveys over the next several years or longer once you find out how enjoyable bat counting is. However, you can do as little as one count per year or as many as 24. The initial commitment is a volunteer or researcher who locates at least one roost and conducts a minimum of one emergence count of that site a year. Locating and conducting a base line emergence count is one of the most important aspects of this study. You may be contacted by researchers to use your site in a more extensive study. Once you have participated with an initial commitment and learn how much fun counting bats is, you may want to increase your effort. Listed below are different levels that can be used in this study.

LEVEL 1- Find and conduct at least one emergence count of a roost between 15 May and 1 August. Additional roosts can also be located and additional counts conducted. Base line information on many roosts is extremely valuable. If conducting one count try to conduct in mid-July (late lactation for females) when the colony should be most stable.

LEVEL 2- Find and conduct at least one (pref. 2) or more emergence counts of a roost before most pups begin flying (pre-volant).

Pre-Volant (before pups can fly):

Conduct between Last Week in MAY and 3rd Week in JUNE.

Post-Volant (after pups can fly): Conduct after July 4th through July 31. At least one (pref. 2) or more emergence counts after most pups begin flying (post-volant). Target: mid-July.

LEVEL 3- conduct at least one emergence count of a roost at least every 2 weeks (preferably every week) starting the: Last Week of May through July 31.

NOTE: If you want to increase accuracy, it is recommended that the survey be conducted at the same site on a second consecutive night.

Volunteers: Another aspect of this study involves researchers with the appropriate state and federal permits. You may be contacted for permission to use your site in these studies. Proposed work includes netting during the pre-flight period to capture females and evaluate reproductive condition, gathering weight data, banding, and collecting samples for lab studies such as skin and blood samples.

PROTOCOL (How to do the survey)

Finding colonies of bats: Country churches and other old structures provide the best opportunities for finding bat roosts. The largest colonies are usually located along major rivers or other large bodies of water and other colonies can be found most everywhere near forests and water. Buildings such as old houses, country churches, and barns are likely candidates. Usually you can just ask some local people about buildings with bats. Generally bat roosts are locally known. If you're lucky, someone will know of artificial roosts created just for bats. The bat species will usually be little brown (*Myotis lucifugus*) and big brown (*Eptesicus fuscus*) bats where females congregate in spring through summer to give birth and rear their young.

Data Forms: The information you collect will be maintained in a database used to research WNS. A database provides uniform formatting and storage of your data so it can be compared with other surveys. This requires the use of standardized reporting forms. Please use them.

1. **Volunteer Information Form:** This is used to register you within the program. Please print legibly so that your contact information is entered correctly. You only need to complete this form once, unless changes are needed.
2. **Site and Landowner Data Form:** It's important to make contact with the landowners and get their approval. Location information is important. Please record the state and county. If you have a GPS unit, please record the latitude, longitude and datum the unit is set on. If you do not know the datum, write unknown. If you have no access to a GPS, please copy a map with the site circled and return with the form so a general location can be recorded. Otherwise, provide general directions from a town, major road intersection, or other recognizable feature on a map. Record the species using the roost if known, otherwise circle unknown. The last portion of the form collects the landowner's contact information. You only need to complete this form once unless addresses, or other information changes.
3. **Roost Monitoring Data Form:** Use this form for recording the actual bat count. Be sure to indicate the site name and you as the surveyor. Record the date, sky and wind codes (codes are on bottom of form), start temperature, start & end time, total bats counted and technique used, which will usually be visual. Please make a note of other surveyors in comments. Also note any unusual observations. The form page has space for 2 counts. If you conduct more than 2, please copy more forms.
4. **Volunteer Timesheet:** Researching a wildlife disease is an expensive adventure. Funding the work requires grant funds and most grants including the one funding the regional initiative on WNS require grant funds be matched with a percentage of the grant. In other words, nothing is free. By completing the volunteer survey form your time and vehicle mileage used in this survey can be applied to the required match. Please complete, **SIGN** and return the volunteer form so that you can help us retain and use this grant money.

The Survey: It's best to do some scouting before hand to determine where bats are exiting. You may find that you need help in covering all the exits (front and back of a structure).

- Survey when starting temperatures are above 60°F
- Wind and sky codes must be 3 or less.
- Bring a thermometer, paper and pencil and the emergence form.
- Arrive ½ hour before sunset.
- Locate where the bats are exiting the structure and count them as they exit. Some may re-enter, especially when there are pups inside. Try to keep track of this.
 - If you find that you have a mega-colony that numbers in the thousands, you may need to tally them by the 10's as they exit.
- Position both yourself and helpers for easy viewing of bats exiting. It is best to be in position to have the bats silhouetted against the sky for easier viewing.
- When more than one surveyor is needed, it's a good idea to turn the count into an evening social, with dinner or an ice cream parlor visit afterwards. Please remember to ask permission of the landowner and enjoy the experience.

Roosting Estimate- If time does not permit an emergence count and the roosting bats can be counted, a roost estimate may be recorded in comments. This is most useful for surveying multiple bat boxes (artificial roosts) where a light can be shined up into the bat box and roosting bats counted. This can also be used if you have access to an attic with roosting bats. **Record the total bats for the count, record “other” in technique and note roost estimate and counting method in comments.** This type of count is generally a minimal estimate since many bats may not be seen but it does record a roost.

Upon the completion of any re-survey, landowner and surveyor information should be checked and updated if necessary. Thank you again for participating in this important survey of your wildlife resource.

Return Survey Data to:

Delaware Bat Count Project - Erin Adams
Natural Heritage and Endangered Species Program
4876 Hay Point Landing Rd
Smyrna, DE 19977

Forms to Submit:

1. Volunteer Service Agreement
2. Volunteer Timesheet (**drive time not included**)
3. Landowner/Site Information
4. Roost Monitoring Data

Call or email Erin Adams with any questions or concerns at (302) – 735 – 8669 or Erin.Adams@state.de.us

2010 DELAWARE BAT COUNT PROJECT

Landowner and Roost Site Information

Volunteer contacted Landowner before arrival? ↑ Yes ↑ No

Site name: _____ **State DE** **County:** New Castle Kent Sussex

LAT: _____ ° - _____ ' - _____ " (N)

LON: _____ ° - _____ ' - _____ " (W)

DATUM (circle): WGS84 (preferred) – NAD83 – NAD27

Lat/Lon Precision (circle): GPS – From Map – County. Resolution – Not Mapped – Other (specify) _____

(circle- "GPS" if GPS unit used; "From Map" if plotted from map; "County Resolution" if coordinates are only County specific)

Roost Structure is: barn – church – occupied house – unoccupied house – utility building – bat box – bat condo – bridge – tree –
cave – mine – unknown – other structure (describe): _____

Roost Structure fate/plans are: Bat Exclusion Planned Possible Bat Exclusion No Exclusion Planned Other _____

Primary Species within Roost: _____ or Unknown (circle if unknown)

(list only 1 if known., and make comments on others)

COMMENTS (include directions to site, where bats are exiting, how many surveyors needed at site, other species roosting, landowner's plans for the bat colony, history of site regarding bats, etc. attach more sheets if needed):

LANDOWNER INFORMATION (CONFIDENTIAL):

NAME: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE: _____ **EMAIL:** _____

SURVEYOR(S) NAME: _____

2010 DELAWARE BAT COUNT PROJECT

Roost Monitoring Data Sheet

*Record for each individual date surveyed

SITE NAME _____ SURVEYOR: _____

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other
COMMENTS:

SITE NAME _____ SURVEYOR: _____

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other
COMMENTS:

SKY		WIND		
CODE	DESCRIPTION	CODE	DESCRIPTION	~Speed
1	Clear-Clear to a few clouds	1	Calm-Leaves Still	0 MPH
2	Partly Cloudy-Clouds but variable sky conditions	2	Slight Breeze-Leaves slightly Rustling	1-7 MPH
3	Cloudy-Mostly cloudy or overcast	3	Gentle Breeze-Leaves and twigs in motion	8-12 MPH
4	Drizzle-Light intermittent rain	4	Mod. Breeze-Small branches begin to move	13-18 MPH
5	Showers-Steady soaking rain	5	Windy-Small Trees or more in canopy sway	19-24+ MPH
6	Thunderstorms-Rain with thunderstorms	6	Not Recorded-	Not Recorded
7	Not Recorded-Not Recorded			

Sky and wind codes of 1 – 3 are best. Code of 4 is marginal. Avoid surveying if code is higher than 4.



Individual Volunteer Service Agreement

This agreement is intended to indicate the respect and seriousness with which we treat our volunteers. It does not represent a legally binding contract nor constitutes an offer of employment. The intent is to assure you both of our appreciation and to indicate our commitment to do the very best we can to make your volunteer experience a productive and rewarding one.

2010 DELAWARE BAT COUNT PROJECT

I WILDLIFE PROGRAM

We, the Delaware Bat Count Project, in the Division of Fish and Wildlife, agree to accept the services of (*volunteer*) _____ to assist with collection of information on bat populations in Delaware, and we commit to the following:

1. To treat the volunteer as a partner jointly responsible for completion of the Bat Project mission.
2. To provide information on how to conduct surveys.
3. To respond to volunteer's questions and concerns.
4. To provide feedback on the project status periodically.

II The Volunteer

I, _____, agree to serve as a volunteer, without compensation, in the capacity of Data Collector and commit to the following:

1. To perform my volunteer duties to the best of my abilities.
2. To adhere to project protocols, including record-keeping requirements and confidentiality. Furthermore, I will not attempt work that is beyond my abilities, or for which I have not been trained or authorized.
3. To meet schedule commitments, or provide adequate notice so alternate arrangements can be made.

I understand the risks of volunteering with the Division of Fish and Wildlife and acknowledge that neither the State of Delaware, nor the Department of Natural Resources and Environmental Control, nor any state employee, will assume any financial liability for any injury or illness that I, or anyone I bring in attendance with me, might incur while performing my volunteer service. I understand that I am not eligible for Workers Compensation and that I am responsible for an injury that may occur to me.

III AGREED BY:

Volunteer (sign) *Date* *Parent/Guardian if under 18* *Date*

Address _____ *Phone* _____

_____ *Email* _____

Surveyor Type (circle what best describes you):

Landowner -You are surveying a roost on your own property (use this even if also surveying other sites you do not own).

Volunteer -You are surveying as a volunteer and have limited expertise in both bat identification and ecology.

Student -You are a student studying bats with a basic expertise in both bat identification and ecology.

Researcher -You are actively involved in bat research on an academic and/or professional level.



DE Division of Fish and Wildlife 2010 Bat Count Project



VOLUNTEER TIME SHEET REPORT

For questions or comments regarding timesheets or projects, contact Erin Adams at erin.adams@state.de.us or 302-735-8651 or 8669. Please do not include travel time. Completed forms should be mailed or delivered to **4876 Hay Point Landing Rd., Smyrna DE 19977**. *Faxed or emailed forms cannot be used; live signatures are necessary for grant paperwork.*

Name:		Phone:	
Address:			
Date	Location	Activity	Hours
Total			

Volunteer Status

- ☐ True volunteer receiving no compensation.
- ☐ Compensated by federal grant or employer with federal funding source. Please identify federal grant or employer: _____
- ☐ Compensated by employer with a non-federal funding source. Please identify employer: _____

I certify that the volunteer activities and the volunteer status indicated above are true and correct.

Volunteer's Signature: _____ Date: _____

For Office Use Only

Date Received: _____

Received By: _____

Grant #: _____